

CLAIMS

1 1. A clamp assembly for interconnecting components in a fluid
2 system comprising:

3 two interconnected clamp members each having a C-shape that form a
4 channel;

5 a spacer disposed within said channel, wherein said spacer includes a
6 centrally located bore defining a part of a central passageway for the
7 transmission of a fluid;

8 at least one port member disposed in said clamp member channel
9 adjacent said spacer, wherein said port member includes a center portion with a
10 clamping portion at one end of said center portion and a connecting portion at
11 the opposite end and a longitudinally extending bore defining part of a central
12 passageway for the transmission of the fluid; and

13 a flange extending radially from said port member clamping portion,
14 wherein said flange has a predetermined shape corresponding to that of said
15 clamp member channel, so that a plurality of clamping forces from said clamp
16 members are directed radially inwards from points of contact between said
17 flange and said clamp members to provide cross loading.

1 2. A clamp assembly as set forth in claim 1 further comprising a
2 fastener for interconnecting said clamp members.

1 3. A clamp assembly as set forth in claim 2 wherein said clamp
2 member includes a longitudinally extending bore for receiving the fastener for
3 interconnecting the clamp members.

1 4. A clamp assembly as set forth in claim 1 further comprising a
2 mounting bracket for holding the clamp assembly.

1 5. A clamp assembly as set forth in claim 1 wherein each clamp
2 member includes two sidewalls and an outer wall disposed between said
3 sidewalls to cooperatively form said clamp member channel.

1 6. A clamp assembly as set forth in claim 5 wherein a free edge of
2 said sidewall has a predetermined shape to define an opening corresponding to
3 the predetermined shape of said port member flange.

1 7. A clamp assembly as set forth in claim 1 wherein said spacer is
2 generally circular and includes a transversely extending bore for receiving the
3 fastener for retaining the clamp members together.

1 8. A clamp assembly as set forth in claim 7 wherein said spacer
2 includes an annular groove for receiving a sealing means.

1 9. A clamp assembly as set forth in claim 8 wherein said sealing
2 means is an O-ring.

1 10. A clamp assembly as set forth in claim 1 further comprising two
2 port members disposed in the clamp member channel, wherein one port
3 member is an inlet port member and the other port member is an outlet port
4 member.

1 11. A clamp assembly as set forth in claim 1 wherein said port
2 member flange and said clamp member channel each have an octagonal shape.

1 12. A clamp assembly as set forth in claim 1 wherein said port
2 member connecting portion has an octagonal shape for interconnecting the fluid
3 system components.
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5 13. A clamp assembly as set forth in claim 1 wherein said port
6 member flange and said clamp member channel each have a circular shape.

1 14. A clamp assembly as set forth in claim 1 wherein said port
2 member connecting portion has a circular shape for interconnecting the fluid
3 system components.

1 15. A clamp assembly for interconnecting components in a fluid
2 system comprising:

3 two interconnected clamp members that form a channel, wherein each
4 clamp member includes two sidewalls and an outer wall disposed between said
5 sidewalls to cooperatively form said clamp member channel having a generally
6 octagonal shape;

7 a fastener disposed in a longitudinally extending bore for
8 interconnecting said clamp members;

9 a spacer disposed within said channel, wherein said spacer includes a
10 centrally located bore defining a part of a central passageway for the
11 transmission of a fluid and a transversely extending bore for receiving the
12 fastener for retaining the clamp members together;

13 two opposed port members disposed in said clamp member channel
14 with said spacer therebetween, wherein said port member includes a center
15 portion with a clamping portion at one end of said center portion and a
16 connecting portion at the opposite end and a longitudinally extending bore
17 defining part of a central passageway for the transmission of the fluid; and

18 a flange extending radially from said port member clamping portion,
19 wherein said flange has an octagonal shape corresponding to that of said clamp
20 member channel, so that a plurality of clamping forces from said clamp
21 members are directed radially inwards from points of contact between said
22 flange and said clamp members to provide cross loading.

1 16. A clamp assembly as set forth in claim 15 further comprising a
2 mounting bracket for holding the clamp assembly.

1 17. A clamp assembly as set forth in claim 15 wherein a free edge of
2 said sidewall has an octagonal shape to define an opening corresponding to the
3 octagonal shape of said port member flange.

1 18. A clamp assembly as set forth in claim 15 wherein said spacer
2 includes an annular groove for receiving a sealing means.

1 19. A clamp assembly as set forth in claim 18 wherein said sealing
2 means is an O-ring.

1 20. A clamp assembly as set forth in claim 15 further comprising two
2 port members disposed in the clamp member channel, wherein one port
3 member is an inlet port member and the other port member is an outlet port
4 member.

1 21. A clamp assembly as set forth in claim 15 wherein said port
2 member connecting portion has an octagonal shape for interconnecting the fluid
3 system components.

1 22. A clamp assembly for interconnecting components in a fluid
2 system comprising:

3 two interconnected clamp members that form a channel, wherein each
4 clamp member includes two sidewalls and an outer wall disposed between said
5 sidewalls to cooperatively form said clamp member channel having a generally
6 circular shape;

7 a fastener disposed in a longitudinally extending bore for
8 interconnecting said clamp members;

9 a spacer disposed within said channel, wherein said spacer includes a
10 centrally located bore defining a part of a central passageway for the
11 transmission of a fluid and a transversely extending bore for receiving the
12 fastener for retaining the clamp members together;

13 two opposed port members disposed in said clamp member channel
14 with said spacer therebetween, wherein said port member includes a center
15 portion with a clamping portion at one end of said center portion and a
16 connecting portion at the opposite end and a longitudinally extending bore
17 defining part of a central passageway for the transmission of the fluid; and

18 a flange extending radially from said port member clamping portion,
19 wherein said flange has a circular shape corresponding to that of said clamp
20 member channel, so that a plurality of clamping forces from said clamp
21 members are directed radially inwards from points of contact between said
22 flange and said clamp members to provide cross loading.

1 23. A clamp assembly as set forth in claim 22 further comprising a
2 mounting bracket for holding the clamp assembly.

1 24. A clamp assembly as set forth in claim 22 wherein a free edge of
2 said sidewall has a circular shape to define an opening corresponding to the
3 circular shape of said port member flange.

1 25. A clamp assembly as set forth in claim 22 wherein said spacer
2 includes an annular groove for receiving a sealing means.

1 26. A clamp assembly as set forth in claim 25 wherein said sealing
2 means is an O-ring.

1 27. A clamp assembly as set forth in claim 22 further comprising two
2 port members disposed in the clamp member channel, wherein one port
3 member is an inlet port member and the other port member is an outlet port
4 member.

1 28. A clamp assembly as set forth in claim 22 wherein said port
2 member connecting portion has an octagonal shape for interconnecting the fluid
3 system components.

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- 1 29. A clamp assembly as set forth in claim 22 wherein said port
- 2 member connecting portion has a circular shape for interconnecting the fluid
- 3 system components.